ETHYLENE OXIDE IRIS ASSESSMENT

Background:

- Ethylene oxide (EtO) is a gas used as an intermediate in chemical synthesis and as a sterilizer for medical equipment and other materials.
- Human exposures to EtO can occur both in workplaces using EtO and to residents living or working in proximity to facilities that use EtO.
- EtO is a hazardous air pollutant regulated under the Clean Air Act and a registered pesticide regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).
- In 2016, EPA posted the final Integrated Risk Information System (IRIS) EtO cancer inhalation toxicity assessment. The assessment estimated a cancer potency approximately 50 times greater than the previous estimate calculated in the 1985 EtO assessment.
- EPA's most recent National Air Toxics Assessment (NATA), released in August 2018 and using 2014 emissions data, shows that a number of areas could have elevated cancer risks from long-term inhalation exposure (i.e. 70 years) to EtO.

Key Points:

- Willowbrook, IL, home to a sterilizing facility (Sterigenics), was identified by NATA as having elevated cancer risks due to EtO emissions. This location has garnered significant interest from stakeholders—particularly from Senator Duckworth (D-IL).
- ORD is working with OAR to help with risk communications needs. ORD is also working on an ongoing Regional Applied Research Effort (RARE) project to improve methods for measuring EtO in ambient air.
- On September 20, 2018, the American Chemistry Council submitted a Request for Correction (RFC) regarding the use of the EtO assessment in the 2018 National Air Toxics Assessment. The request is under consideration by the Agency (the RFC process is managed by OEI).
- The 2016 IRIS assessment conclusions are supported by animal cancer studies, occupational epidemiology studies, and mechanistic studies, and underwent two rounds of external expert peer review by the Science Advisory Board.

TALKING POINTS:

- EPA is conducting research to improve the methods for measuring EtO in the air to ensure accurate measurement and assessment of potential exposures.
- EPA is currently considering the American Chemistry Council's Request for Correction regarding the NATA's use of the 2016 EtO IRIS assessment and has not yet made any decisions about the request.